

## ABSTRAK

**Wifia Kalista Dianty. 2024. Pengaruh Pemanfaatan Limbah Rumah Tangga Menjadi Pupuk Kompos Terhadap Pertumbuhan Dan Hasil Tanaman Cabe Rawit (*Capsicum frutescens*). Dibawah bimbingan Cecep Hidayat dan Esty Puri Utami.**

Permasalahan sampah organik rumah tangga di Bandung Raya meningkat akibat keterbatasan TPA Sarimukti pasca kebakaran, data KLHK (2022) mencatat 41,62% limbah berasal dari dapur, yang sulit diolah tanpa pemisahan. Limbah organik yang diolah menjadi kompos dapat memberi nilai tambah. Penelitian ini mengkaji pengaruh kompos limbah rumah tangga terhadap pertumbuhan dan hasil cabai rawit (*Capsicum frutescens*). Metode yang digunakan adalah Rancangan Acak Kelompok (RAK) dengan tujuh perlakuan kombinasi dosis kompos dan pupuk NPK, diulang empat kali. Analisis menunjukkan tanah lokasi penelitian bersifat asam (pH 4,8–5,1) dan memiliki kandungan C-organik rendah (1,66%). Hasil terbaik diperoleh dari perlakuan NPK murni (P1), dengan rata-rata tinggi tanaman signifikan pada 7 HST, waktu berbunga tercepat (44 HST), jumlah buah tertinggi (10,2 buah/tanaman), dan berat rata-rata buah terbesar (8,8 gram). Kombinasi kompos dan NPK, seperti P5 (kompos 40% + NPK 60%), menghasilkan pertumbuhan baik meski sedikit lebih rendah dibandingkan NPK murni, sementara penggunaan kompos tunggal (P3) menunjukkan pelepasan nutrisi lebih lambat. Penelitian ini menyimpulkan bahwa kombinasi kompos dan NPK merupakan alternatif berkelanjutan untuk meningkatkan hasil tanaman, mengurangi ketergantungan pada pupuk kimia, memperbaiki struktur tanah, dan meningkatkan efisiensi air. Pendekatan ini mendukung pengelolaan limbah organik yang berkontribusi pada keberlanjutan pertanian dan lingkungan.

**Kata Kunci :** Kompos, Limbah Rumah Tangga, NPK, Cabai Rawit

## ABSTRACT

**Wifia Kalista Dianty. 2024. The Effect of Household Waste Utilization as Compost Fertilizer on the Growth and Yield of Cayenne Pepper Plants (*Capsicum frutescens*). Supervised by Cecep Hidayat and Esty Puri Utami.**

The problem of household organic waste in Greater Bandung has increased due to the limitations of the Sarimukti TPA after the fire. KLHK data (2022) records that 41.62% of waste comes from the kitchen, which is difficult to process without separation. Organic waste that is processed into compost can provide added value. This research examines the effect of household waste compost on the growth and yield of cayenne pepper (*Capsicum frutescens*). The method used was a Randomized Block Design (RAK) with seven treatments combining doses of compost and NPK fertilizer, repeated four times. Analysis showed that the research site soil was acidic (pH 4.8–5.1) and had low organic C content (1.66%). The best results were obtained from the pure NPK treatment (P1), with a significant average plant height at 7 DAP, the fastest flowering time (44 DAP), the highest number of fruit (10.2 fruit/plant), and the largest average fruit weight ( 8.8 grams). A combination of compost and NPK, such as P5 (40% compost + 60% NPK), produces good growth although slightly lower than pure NPK, while the use of single compost (P3) shows slower nutrient release. This research concludes that the combination of compost and NPK is a sustainable alternative for increasing crop yields, reducing dependence on chemical fertilizers, improving soil structure, and increasing water efficiency. This approach supports organic waste management that contributes to agricultural and environmental sustainability.

Keywords: Compost, Household Waste, NPK, Cayenne Pepper